A 2500-3000 word written assignment which demonstrates the student's understanding of the relationship of motor development to cognitive and affective development in the process of learning.

This essay has been written at a time when underlying tensions between the British private, voluntary independent (PVI) and state early years sectors has surfaced. Fuelled by a media campaign, led by state stakeholders, families from poorer socio-economic backgrounds, with young children are being encouraged to access mainstream school for their children, at an ever earlier age.

In a recent speech (2014, pp.2-10) the head of OFSTED, Sir Michael Wilshaw publically sought to define, normalise and enforce the key physical, cognitive and social skills and attributes that he suggests young children need to be prepared for school life. However, while many of the desired developmental attributes listed by Wilshaw appear achievable, the problem with this report is that he seems to be suggesting that young children can only prepare for school by attending school provision in their early years.

In contrast to the dominant state school discourse, this essay will analyse observations of a child who attends a voluntary sector preschool. The study will explore a theme that is less well championed in popular public media, that of young children learning through doing and the relationship between motor development (which can be affected by biological, environmental and cultural factors and is to do with physical growth and a child's developing mastery over gross and fine motor

muscle balance and co-ordination), cognitive development, (which can be influenced by environment, culture and biology and is to do with brain cell growth and the child's growing mental ability to think, problem- solve, process and interpret sensory information through a network of strengthening neural pathways) and affective development, (influenced once again by the biological, environmental and cultural realms which help to form a child's developing network of feelings and emotions, personal perception and how resilient they become). This study seeks to demonstrate how learning and development can happen in any learning environment where motor development is utilised as the catalyst to learning.

The names in this study have been changed and I have called the child that I have been observing 'Harvey,' Harvey's mum has consented to his inclusion in it. Harvey turned 36 months old in April 2014 and according to his mum, there were no issues or concerns around his birth. Harvey lives with his mum, dad and 5 year old sister and has been attending the preschool for nearly twelve months. Harvey attends the preschool for 12 hours per week.

Although the current early years framework places emphasis on physical development, including motor skill mastery, as a 'prime area' (DFE, 2012, p.04), there has been an increase in the standard of expected academic curriculum progress in the areas of 'moving and handling' (Early Education, 2012, p.24), 'reading' (2012, p.29) and 'writing' (2012, 31). Professionals are under pressure to be seen to be supporting every child to achieve academic developmental outcomes

from an increasingly young age.

The tension is that all children are unique. A child's level of physical growth (their vertical and horizontal laterality), and maturation (or the process and development of key physical, mental and emotional characteristics at certain stages which affect how and when a child is ready to take on new skills and information), are interlinked. Growth and maturation have a biological grounding and while Underdown (2002, pp.113-114) suggests that factors including diet contribute to the healthy physical development of a child's growth, a professional can do little to develop a child until they are physically and mentally mature enough to progress onto the next level. Effective cognitive and affective development are reliant on strong motor skill acquisition and mastery.

In essence, Wilshaw's report seems to suggest that a child's ability to learn relies on a preferred adult's input (2014, pp.05-06). Yet, individual children start from different starting points. It is this top down view of education which is perhaps reminiscent of what Holt observed in classrooms in the 1960's (cited in Holt, 1983) that Nutbrown argues, 'insults' a child's capabilities (2006, p.124). Children need support rather than interference.

Harvey was chosen for this essay because he is active and self- motivated. Something deep within Harvey leads him to experiment and explore for himself. It is

from a foundation of what the Early Years framework (DFE, 2012, PP.06-07) calls 'playful exploration' or 'motivation', or acts of self-motivated 'discovery' (Bruner, 1961, p.02), that professionals can begin to observe some of the 'effective characteristics,' (children's curiosity and motivation) that underpin the 'teaching and learning' of young children (DFE, 2012, pp.06-07).

In the lead up to this investigation, I noticed how Harvey was exploring cause and effect in what Piaget called the 'sensory-motor stage of development' (1964, p.177), by repeating patterns of body movement or actions (Nutbrown, 1994, pp.12-15). Harvey seems to be motivated by an unshakeable curiosity to explore a 'trajectory' schemata or interest (Kennett and Burnell, ND, p.04) by jumping on and from objects and obstacles. Harvey has also been observed throwing, catching, rolling and bouncing balls.

Harvey is learning through sensory play, which Dryden and Vos (1997, pp.227-231) suggest is effective because children's senses provide the only direct pathways they have to the brain. Information is more memorable when a child has initiated it or been allowed to play with it in some way (Whitebread, 1996, pp. 16-17). In cognitive terms, children form stronger neural connections when they are actively playing because they are strengthening the links between their physical and mental realms, which Sprenger suggests happens when children get time to rehearse and memorise sequences of information (2008, p.19).

The sequences and skill involved with Harvey's jumping suggest that his ability has developed through practice over time because Sprenger (2008) argues that children stand more chance of becoming skilled if they can practice something from an early age (2008, p.19). Indeed, the model presented by Gallahue and Ozman (1995, pp.253-255) suggests that Harvey is perhaps in a 'mature stage' of development when it comes to his jumping prowess, (lines 9 and 10 and 43 to 46 in appendix 3). Harvey balances and shifts weight from the soles of his feet to his toes, before jumping. As he balances on the chair, Harvey positions his hands slightly behind him and brings them forward, up and out, to create momentum. Harvey maintains a forward trajectory as he leaps and whilst Harvey's legs are apart, he has been observed leaping with his legs together, in the past. Harvey crouches and lands safely, bending his knees to absorb the impact. His hands steady him as he lands. Harvey would be expected to achieve mastery in this motor area later in his childhood (Gallahue and Ozman, 1995, pp.253-255) if his interest laid elsewhere.

So, on a superficial level, it may seem that Wilshaw (2014, p.05) would agree that learning through play involves 'challenge and tension' (Roberts, 2002, p.74), and that play provides children with 'essential practice experience' (Jarvis, 2009, p.11). But an overview of my observations of Harvey suggests that Wilshaw is perhaps undervaluing children by arguing that they fail to gain new skills unless the appropriate adult is on hand to fill them with the desired information (2014, p.06).

Harvey's play demonstrates that he is empowered, which is perhaps more reminiscent of Bronfenbrenner's 'ecological theory' (1979, p.03) because children 'actively learn' (Roberts, 2002, p.77) from a mixture of the relationships and experiences around them and their own motivation. In Harvey's case, his trusted community of adults allow him to experiment and take risks. Children are naturally built to soak up information and are learning all the time. For better or worse, the limits to how children are permitted to explore are provided by all the adults and the environment in which they exist. However, Harvey may have his own plans too.

The problem is that Harvey's repetitive play may be dismissed as unproductive. When, in fact, Broadhead and Burt (2012, p.67) reveal that some children are so adept in what they do that the skill involved may be lost on those who watch. According to Play England (2009), there is always a purpose to children's play, yet Tripp suggests (1993, pp.43-44) that professionals need to look deeper at events from multiple perspectives before they can form a deeper understanding.

In Harvey's case, the work of Piaget in the 1950's becomes evident. Kant and Piaget suggest that children are programmed to learn new things and develop new skills, through their interests, as they actively experiment and construct knowledge from the surrounding environment (cited in Bruce and Meggitt, 1996, p.54). Bruce (cited in Roberts, 2006, p.79) suggests that children embark on a continuous cycle of struggle, rehearsal and play until they have mastered what they are trying to achieve or until something new and unexpected stimulates the cycle again. Yet, this stimulus

is often provided by the child's social environment.

The social environment is evident throughout this study's observations as Harvey finds some social experiences more welcoming than others (appendix 5, in lines 40 to 41). The social construction of knowledge takes place on an obvious and more subtle level through the adults and children that Harvey is surrounded by. Harvey interacts with adults, and his peers, who in turn provide what Bruner called 'scaffolding' or a stimulating role model (cited in Bruce and Meggitt, 1996, p.55) for Harvey to interact with. This sharing of ideas is evident in appendix 1 (lines 9 to 13 and 16 to 53), appendix 2 (lines 6 to 21), appendix 3 (lines 5 to 13, 28 to 29 and 31 to 48), appendix 4 (lines 49 to 93 and 103 to 142) and appendix 5 (lines 1 to 3 and 40 to 41, 44 to 46, 50 and 58 to 60). But, just as in Bandura's theory of role model learning (1971, pp.1-13) wittingly or not, it is the approaches that others take that shapes Harvey's cognitive, emotional and physical learning environment and help him to regulate what he is allowed to do.

Harvey was allowed to explore freely, how he saw fit, apart from appendix 2 where I encouraged him to try a new technique, but the subtle influence from others is present throughout the observations and can be demonstrated through Harvey's language and actions. But, in terms of verbal language, it is possible to see Harvey's thought patterns and progressive 'critical thinking' (DFE, 2012, p.07). In line 8 (appendix 1) Harvey wanted to communicate, he had noticed the size of the puddle and wanted to show those around him. In lines 36 to 39, it is possible to see that

Harvey has developed an awareness around size and volume and he gives some indication of his perception, or what Macintyre and McVitty (2004, p.68) call the processing and application of sensory information that is held in the brain. Building on Miller's work on memory and recall in the 1950's which focused on breaking down, storing and recalling small groups of information (1956, pp.81-97), it would seem that Harvey is sifting or grouping information to allow him to apply the most 'significant' (Doherty and Hughes, 2009, p.221) knowledge to what he faces. He then cements his knowledge through action (line 37).

Harvey is confident to reach out when he is observing (appendix 3), lines 33 to 35 and 37 to 39 and in appendix 4 (lines 12, 56 to 58, 73 to 74, 77 to 88). But in line 22 (appendix 1) Harvey begins to make subtle connections through what Piaget calls 'egocentric speech' (cited in Kozulin, 1986, pp.26-29). This speech is a personal vocal accompaniment to Harvey's actions. It is a part of a pattern of play rather than being aimed at anyone in particular. But it is through looking at line 22 that the connection can perhaps be made between Harvey's past experiences, his memory and his perception or understanding. He then applies this to his present actions. In this case, Harvey seems to make a connection between previous experiences of water, which enabled him to predict that the stone may make a 'drip drop' sound when it enters the water. This type of vocalised internalised understanding is evident in appendix 4 (lines 17, 20, 24, 26, 29, 48, 53, 95 and 96, 118 and 137) and appendix 5 (lines, 30, 39 and 48).

But something about the emotional learning environment and more specifically Harvey's emotional understanding is also evident in appendix 5. It comes again from Harvey's egocentric speech (line 48). I am not certain that his statement was entirely egocentric because it felt like Harvey knew that I was watching him (lines 44 to 46, 49 to 50 and 57 to 58). Line 48 suggests that Harvey thinks he is doing something that he thinks I might perceive as "naughty."

Bilton suggests that children become nervous unless they know what the boundaries are (2010, p.37) and I wondered if Harvey initiated his sequence of actions in appendix 5 to see how I would react. But my learning intention or the reason I offered these resources and opportunities was to allow Harvey to explore in a free-way that he felt comfortable with. I wanted to show that I trusted him. Whitebread suggests professionals need to learn to trust children, because the natural curiosity, or the 'feelings of empowerment' (1996, p.08) that children possess, help them to form self-awareness of themselves as learners. On the whole, Harvey is confident to actively explore because that is what most of the Preschool and his family have allowed him to do, apart from someone, maybe.

Harvey may be a little confused but Post and Hohman (2002) suggest that children who are allowed to play in their own way are displaying personal identity (2002, p.81). If I can affirm a child's preferred identity, or uniqueness, then perhaps this goes some way towards providing that child with what Rodd suggests is warm loving care (1996, pp.26-27), they feel they are accepted. I can promote resilience in

children through fostering a sense of ‘belonging’ and stimulating contextualised learning (Carr and Lee, 2012, pp.30-39), which is achieved through encouraging children to be themselves (Beaver et al, 2002, p.205).

By giving Harvey time to explore, the adults in his life are encouraging his flexible creative thinking. Dweck suggests that this flexibility of thought (2006, pp.3-12) helps children to internalise messages that they have a level of control over their actions and they become accustomed to trying to problem-solve for themselves. In doing so, the adults in a child’s life support the child along the journey from helplessness to independence which Whitebread suggests will have ‘major implications’ (1996, p.06) on a child’s future.

Without self- chosen opportunities Harvey may resort to routinely asking for help before trying for himself. Vygotsky (cited in Bruce and Meggitt 1996, p.55) felt that it was important that ‘more knowledgeable others’ (1996, p.55) sensitively helped the child to master new skills but this does not have to be directly. By adjusting the emotional and physical learning environment, I have encouraged Harvey to explore but I have also afforded him a level of responsibility for his own learning and supported his self- esteem and confidence. This nurturing adult role of encouraging children from what they can do into the realms of future possibilities sometimes provides the catalyst to Piaget’s cycle of struggle and accommodation.

There can be a real subtlety to a child's developing patterns of motor exploration, internalised behaviour and emotions, that can mean that their mastery or cognitive skill can be under estimated which is perhaps why the Reggio approach (cited in Thornton and Brunton 2005, pp.8-11) encourages those working with children to actually learn with them, so they can ensure the child is being challenged.

I could become despondent because Harvey did not spend all his time jumping and bouncing with the physical resources that were on offer. But I could still see the rich variety of learning that his level of active motor exploration and confidence afforded him. Harvey is able to learn through observation and follow the lead of others (appendix 2) lines 6 to 21. Harvey is beginning to use his dynamic trajectory interest in his fine motor work (appendix 3, lines 15 to 21 and appendix 5, lines 4 to 6), by taking it into the 'configurative' or representative realm (Bruce, 1997,p.70). Furthermore, appendix 3 (lines 21 to 28) offer a glimpse of another possible 'enveloping' or concealing schema developing (Kennett and Burnell, ND, p.04). Harvey has a right sided laterality or preference (Appendix 2, line 13, appendix 4, 31, 50 and 51, 93 and 94. Appendix 5, lines 4, 8, 12 and 13, 18, 20, 36 and 42) and his 'axial' (Gallahue and Ozman 1995, p.234), or twisting and pivoting control in his torso (appendix 4, lines 11, 18 and 19, 21, 31 and 32, 38, 40, 45, 54 and 81), coupled with the sustained time and control of his play, suggest that his 'vestibular system' (Forbes, 2004, pp.38-39), which is responsible for balance and control is well developed.

Children are pre-programmed to experiment but are sensitive and vulnerable to the

outside influence of the emotional and cultural environment. Therefore children will learn effectively in all contextualised social environments where acceptance, trust, challenge and stimulation underpin practice. Motor skills provide the catalyst that determine a child's ability and readiness to interact with the physical learning environment and how they feel about themselves and their capabilities. Sensory play also directly helps children to cement knowledge and cognitive flexibility which is quite often demonstrated through verbal and non-verbal language. If professionals assume the role of an observant co-constructor of knowledge alongside children they can support self-esteem and enable children to achieve an effective level of motor, cognitive and affective development for the future through being sensitive to the needs of individual children. Next steps for Harvey include mastering the hopping and jumping hopscotch sequence which he can also practice on his new scooter and experimenting with trajectory or bounce on a fine motor level with his favourite small bouncy ball. Practitioners will be observing to see if and how Harvey develops his enveloping interest.

Word count: 3000

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Appendix 1

January 2014

This is a 15 minute observation of Harvey (33 months) that was taken in the morning while he explores the puddles in the car park with Michael, Luke, Carey and Anna (all 3 years). Also present are two practitioners (Shantelle and Franchesca). This experience has been planned to build upon Harvey's observed interest in jumping in the preschool environment.

Harvey approaches the puddles. He stands by the side with both feet together smiling. His body language and facial expressions indicate that he is excited.

(Harvey) "Look, puddles." "Big ones."

Harvey looks at the puddles and leads with his left side as he runs through the puddles. Harvey stops and watches Michael and Luke kicking water at Shantelle's parked car. Michael and Luke's language suggest they are pretending to wash the car. Harvey waits until Michael and Luke leave the area before he too (standing on his left foot and kicking with his right foot) kicks water at the car.

Harvey diverts attention back to running through the puddles. He waits to one side, poised to run.

(Shantelle) "Ready, steady, go."

Harvey looks at her and smiles but he stays where he is. He walks over to the puddle and stamps through one (right foot, left foot, right foot, left foot). Harvey watches the splashing that his stamping makes and smiles throughout.

Harvey watches Carey throwing stones into the puddles. Harvey crouches down and picks a stone up with his right hand. He drops the stone into the puddle.

"Drip, drop," says Harvey as the stone enters the water.

Harvey appears to be watching the ripples that his falling stone forms on the surface of the puddle. It begins to rain.

Shantelle crouches near Harvey and points:

(Shantelle) "Can you see Harvey?" "The raindrops are making rings on the water." "Just like your stone."

Harvey smiles, crouches down and stands up before dropping another stone in using his right hand.

Harvey continues splashing in the puddles (right foot, left foot, right foot, left) but he trips over, landing on the ground.

(Shantelle) "Oh dear!" "Up you jump Harvey."

Harvey uses both hands and pulls his knees to a crawling position to push himself back up onto his feet. Shantelle checks that Harvey is okay and wipes his wet face. Harvey continues with his splashing.

Appendix 1 (continued)

(Shantelle asks the children) “What puddle do you think is the deepest?”

Harvey studies all the puddles, before jumping in what appears to be the biggest one.

(Harvey) “This one”

(Anna) “I’m cold”

Harvey stands still and looks up at Shantelle.

(Harvey) “I cold too”

(Shantelle) “Are you cold too Harvey?”

(Harvey) “Yeah”

Shantelle explains to Anna and Harvey that they can go and get dry soon. She warns everyone in the group that it is nearly time to go and get dry because Harvey and Anna are getting cold.

Shantelle gives the children a couple of minutes longer before encouraging them to go back up to the Preschool. She gives the children the option of getting dry if they are cold or continuing to play in the garden if they would prefer.

Harvey, Michael, Luke and Anna head inside to get dry and warm. Shantelle helps Harvey to take his wet suit and boots off and put his shoes and socks on. Carey stays in the garden with Franchesca to continue splashing in a new puddle.

Observation ends as Harvey decides to stay inside and play.

Appendix 2

February 2014

This ten minute (morning) observation was written in retrospect immediately after a play episode that I had instigated with Harvey (34 months).

I had chalked a hopscotch on the outside path because of Harvey's interest in jumping. Harvey has been very interested in jumping with both feet together so I wanted to see if he could hop and alternate his feet.

(Me) "Would you like to play a game Harvey?"

(Harvey nods his head) "Yes!"

I show Harvey the hopscotch, explain the numbers and ask if I should go first. Harvey agrees. Harvey watches my technique as I hop and jump down the hopscotch an then turn to repeat the action coming back again.

It was Harvey's turn and he gently threw a bean bag using his right hand in an overarm motion onto the hopscotch.

Harvey employed a kind of slow motion run as he led with his right foot down the hopscotch squares. Harvey concentrated on the squares and purposively lifted his left foot up behind his right leg (leaving him standing on his right foot briefly) as he encountered the one squares on the hopscotch. Harvey adopted an exaggerated pose throughout this sequence of hunching his shoulders and in doing so holding his arms up nearer his chest area with clenched fists.

Harvey and I alternated our turns and repeated our play several times. Harvey watched me closely each time that it was my turn and repeated his exaggerated and purposeful poses as he attempted to hopscotch.

Appendix 3

March 2014

Lasting approximately 10 minutes each, these three snapshot observations were taken during the course of a day, with no set reason in mind other than to see what Harvey (35 months) is choosing to do with his time in the setting at the moment.

Arrival time (9.40am – 9.50am):

Harvey has separated from his mum and is watching a group of children and 1 adult throwing shredded paper in the air and letting it fall like 'snow.' Harvey smiles and begins to join in as well. He stands on the periphery of the group, squats down with his knees, holding himself in position, as he scoops paper up with both hands. Harvey smiles and watches some of the other children momentarily before leaping up on both feet, throwing up the paper with both hands from his chest. Harvey watches and laughs as the shredded paper flies through the air and falls down around him. Harvey repeats this action several more times before moving on to another activity.

Mid - morning: (10.50am – 11am):

Harvey is by himself, painting in the workshop area. Harvey is sitting at the table using metal spiral egg cups to print on his piece of paper. Harvey dips the egg cup in the tray of paint with his right hand, he then positions it on the paper before pressing the egg cup down with both hands (right on-top of left). Harvey alternates between red and yellow paint to create his spirals. Harvey appears to be working with some purpose as he positions the egg cup on the paper so it does not overlap with the spirals he has previously created. Harvey looks pleased with his efforts but he then dips both of his hands in the green and blue paint trays, smearing them up and down in the paint before placing them on his spiral printing and gently smearing his hands across the paper in anti-clockwise (left hand) and clockwise (right hand) circular motions. Once the paper is pretty much covered with smeared paint, Harvey returns to printing with the egg cups much in the same way as before this time though he sticks to printing with yellow paint. Once this action is finished Harvey smears the paint again before printing again in yellow and red once more. Harvey has finished and a practitioner helps him to put it somewhere to dry.

After lunch: (1.15pm – 1.25pm):

Harvey has gone to play in the garden. And he spots an adult and child playing with a ball. The child is encouraging the adult to throw the ball on the roof and laughs as the ball rolls down and bounces on the patio. Harvey laughs too as the rubber ball rolls down off the roof. His eyes follow the path of the ball and watch it bounce,

"Again!" says Harvey

The adult repeats the action and Harvey chooses to sit on a nearby chair to watch. Harvey leans back and relaxes with both feet out in front of him. He watches and looks excited once more as the ball bounces in front of him.

Appendix 3 (continued)

“Do it again please,” Harvey shouts

The adult continues and Harvey looks very focused as his eyes follow the path of the ball and his head nods up and down in sync with the bouncing ball.

The adult is distracted to another area of the garden, Harvey tracks and watches the adult while still sitting on the chair. Harvey stands up on the chair and with both feet apart leaps into the air using his arms and shoulders to propel himself forward. Harvey lands in a steady crouching position on both feet. He turns and climbs back up onto the chair before repeating once more. Harvey climbs back onto the chair but seems to give up on waiting for the adult to return and rides off on a balance bike to play elsewhere.

Appendix 4

March 2014

A table has been set with a tray of salt, bowl of water, watercolour paint and a small jug of oil, to appeal to a number of children's (including Harvey's) interest in exploring through touch. The resources have been supplied to see how individual children would explore the different media and the kind of conversations and subject matters that may be generated through their exploration.

This ten minute observation takes place immediately after lunch when Harvey (35 months) chooses to join the table at which Anna (48 months) and Carey (48 months) are already mixing.

Harvey puts both of his hands into the bowl containing paint, water, oil and salt and pulls his hands out now covered with the mixture. Harvey looks at his hands (outstretched in front of him) and turns to show me.

(Harvey) "Glen, Look all muddy."

(Harvey) "Look"

Harvey turns back and holds both of his hands over the tray of salt and momentarily watches the water drip from his fingers into the salt. Harvey quickly puts both of his hands into the tray, looks and squelches the salt with his fingers.

(Harvey) "muddy, muddy, muddy, muddy!"

He continues to handle the salt mixture between his fingers. Harvey turns to the water mixture bowl and looks at his hands in the bowl as he 'rinses' his fingers.

(Harvey) "muddy, muddayyy!"

Harvey scoops painty water in both hands and turns back to the tray of salt pouring his water in. Harvey watches the water fall onto the salt and then puts both hands in again to mix, handle and feel the salt and water.

"Muddy, muddayyy!" says Harvey as his squelches the mixture.

Harvey scoops up more salt in both of his hands and turns back to the water bowl.

(Harvey) "Muddy, muddy." "Muddy, muddy."

Harvey puts both of his hands into the bowl again and focuses intently on rinsing his fingers and mixing the media while continuing to chant:

(Harvey) "Muddy, muddy." "Muddy, muddy."

Harvey chants as he pulls his hands out of the bowl once more and watches closely as he pours salty water from his right hand into his outstretched left one. Harvey twists his trunk to the right and explores the salt tray once more. He continues his mud chant throughout and picks uses a tripod pinch to pick up salt with his right hand. Harvey releases it slowly and watches as it sprinkles into the slat tray. Harvey

Appendix 4 (continued)

repeats this action three times with increasing amounts of salt (using more of his right hand). The speed of which Harvey sprinkles the salt increases in correspondence with his chanting.

Harvey twists to the left and sprinkles a handful of salt into the water bowl before placing both hands in once more to handle and mix the increasingly thick mixture.

Harvey twists to the right and with both hands trickles more of the looser mixture in to the salt tray. He uses both hands to squelch the salt and watches closely as salt falls from his fingers into the tray. Harvey's chanting has stopped now and he quietly focuses and repeats his actions twice more before resuming what he was saying and pouring mixture from his right hand into his left.

Harvey twists to the salt tray and back, this time sprinkling salt into the water bowl with his left hand. Harvey wiggles his fingers on both hands (as if playing a piano) and watches as the wet salt drops into the salt tray once more.

(Harvey) "Urgh, muddy." "Urgh, muddayy!"

Anna has found a flannel and drops it into the water bowl. Harvey watches briefly before continuing with what he is doing. He briefly looks up at my camera. Harvey puts his right hand in the salt tray and uses a large anti-clockwise circular movement to pull the salt closer to his body before scooping it up.

(Harvey) "Muddy, muddy, muddy, muddy!"

Harvey turns to sprinkle more salt in the water bowl with his right hand.

(Harvey looks at me) "Where's the water gone?"

He continues to look in the bowl and looks surprised stood with his right hand outstretched.

(Me) "Where's the water gone Harvey?"

(Me) "Where's all the water gone?"

(Harvey) "Yeah. Where's all the water gone?"

I open the question up to the table by saying:

"Where's all the water gone?" "Does anyone know?"

Anna holds the flannel up and Harvey looks at it.

(Anna smiles) "In here!"

Anna squeezes the flannel over the water bowl releasing water as she does. Harvey watches. Harvey's attention returns to exploring the feel of the salt in the tray. He manages to find some soggy paper that Carey has buried in the salt and pulls it out

Appendix 4 (continued a)

using a tripod grip with his right hand. Harvey puts the paper next to him in the tray but allows Anna to take it away and put it in a nearby bin.

Harvey reaches out with both of his hands and pulls scoops of salt back towards his body. He looks at the camera whilst holding two handfuls of salt outstretched in front of him.

(Anna asks again) “Where’s all the water?”

(Harvey repeats) “Where’s all the water gone?”

Anna reaches over and takes the salt from Harvey’s hands. He looks a little shocked and looks at his now empty hands but he simply fills them up for himself once more.

(Me) “Do you need any more water?”

(Anna) “Yeah!”

(Harvey copies) “Yeah.”

(Me) “Where could you get water from?”

Harvey turns to his right side and points with his right hand to the wash room.

(Harvey) “From the..”

(Anna) “From the tap.”

(Harvey) “From the tap.”

Harvey nods at me and smiles.

(Me) “Now.” “Do you think the bowl will fit under the tap?”

Harvey looks at the bowl but seems a little uncertain.

(Harvey nods) “Yeah”

Anna takes the bowl to the washroom but cannot fit it under the tap so I suggest that Anna goes to the kitchen to ask for some water. Anna takes the bowl and heads for the kitchen. Harvey had been scooping more salt but he stopped and followed Anna to the kitchen.

Harvey returns closely followed by Anna carrying the bowl of water. Harvey feels the water first with his right hand and then his left as it is placed on the table. He scoops more salt in with his right hand.

(Harvey) “Urggh, urggh”

(Harvey scoops in more salt) “Wet, wet”

Carey and Anna start scooping the salt and throwing it into the water bowl and bin while giggling. Harvey wipes his left eye with his right forearm and blinks. Harvey scoops wet salt into the bin with his right hand. I warn the girls about where they are

Appendix 4 (continued b)

throwing the salt and explain that it will be slippery on the floor too. Harvey continues to scoop between containers.

(Carey) “We need gloopy glue to make it.”

(Carey sings) “We mix it up, we mix it up.” “We mix it up to make it.”

Carey encourages me to pour glue on her hand, which I do. Carey puts it in the water bowl and Anna joins her mixing the glue and water with paint brushes. Harvey watches them and mixes the glue and water mix with his right hand. Harvey appears intrigued as the water and glue coagulate into a slimy texture which he drizzles into the salt tray. Some of the glue gets stuck to Harvey’s fingers and he holds it up in front of his face.

(Harvey) “Urghh”

He wipes both hands around in the salt tray. Harvey watches Anna and Carey drizzling the slimy mixture and does again for himself using both hands. Harvey watches closely as he wiggles his fingers on both hands in front of his face. He watches the mixture drop into the tray. Harvey has a disgusted facial expression and drizzles slime into the bin. Harvey flaps both of his hands in unison to get rid of the slime from his fingers. Harvey pokes out his tongue as he gathers more slime and drops it in the bin. Harvey holds his right hand higher in the air and watches the slime drip into the tray.

(Harvey) “Ahhhh.” “Errrr”

(Harvey) “Gloopy glue”

Carey asks for more glue. Harvey watches as I pour glue into Carey’s hand and holds out his right hand so I can pour some into his.

(Harvey) “Gloopy glue”

He watches the glue seep between his fingers into the water bowl and briefly holds his hands together before using a clockwise circular motion in the bowl to wash his hand off.

(Anna is using the glue and bowl too) “Disgusting!”

(Harvey) “Disgusting”

He drizzles his gluey hands over the bowl. Harvey has created long strains of coagulated glue and watches intently as he pours them from his right hand over his left and through his thumb and fingers. Harvey picks up a paint brush that is saturated with glue and starts to pick it off over the bin.

(Me) “Monster slime”

(Harvey) “Monster slime” “MONSTERRR SLIMMME!”

Appendix 4 (continued c)

Harvey drops the brush from his right hand into the tray and flaps both of his hands over the bin. Harvey scoops more glue slime up with his right hand and watches it drop into the tray.

(Harvey) “Urggghhh!”

(Anna) “We need more in my hand”

(Harvey holds out his right hand) “Need more in my hand”

Harvey smiles as he watches me fill up Anna’s hand and lets me do the same to him.

(Anna) “Slimey!”

(Harvey) “Slimey”

Observation ends as the camera stops.

Appendix 5

April 2014

This observation lasts for approximately 25 - 30 minutes. Harvey (36 months) is playing, in the garden, independently exploring water and bubbles among a group of 4 other children.

Harvey dips a paint roller into the water tray using his right hand and rolls it back and forth on an empty table. He watches the path of the roller and the wet marks on the table intently. Harvey repeats this for approximately 5 minutes.

Harvey spots a tricycle and sits on it (still with the roller in his right hand). Harvey uses his feet on the ground to propel his tricycle along the grass, right foot, left foot, right foot, left. He holds the handle with his left hand and holds the roller aloft in his right. Harvey stops once he gets to the path, bends over to the right side of the tricycle and rolls his wet roller back and forth on the path twice.

Harvey propels himself along the path, sitting on the tricycle and using his feet. He stops at the wall and turns to his right. Harvey pushes and pulls the roller, vertically, up and down the wall (twice).

Harvey is distracted as he spots a red balance bike on the floor. He dismounts from the tricycle and goes over the bike. Harvey pulls it up from the right side and uses both hands to push it over to the climbing frame area by the handles. Harvey moves around on to the left side of the bike and picks it up (right hand at the back and left hand on the handle). He somehow manoeuvres the bike to go through an opening on the climbing frame, on its' side. Once Harvey has climbed up (right foot leading) he stands the bike upright and wheels it to the slide. Harvey rolls the bike down the climbing frame (smiling) before sitting down at the top of the slide and sliding down backwards (still seated). Harvey lays down on his back as he reaches bottom of the slide and smiles as he looks at the sky.

Harvey leaves the bike where it is. He runs around and climbs back onto the climbing frame, this time he climbs up the ladder, (right foot lead once more). Harvey looks in the direction he is climbing. Harvey stands at the top of the slide and looks at me before running down. Harvey turns around and walks up the slide (hands on his hips),

"Yuh, yuh, yuh" says Harvey

Harvey steadies himself at the top of the slide, he bends forward and walks down the slide backwards with his hands on his knees.

Harvey's attention returns to the bike. He wheels it around to another larger opening on the climbing frame and manages to get the bike up by standing it on its' end and wheeling it vertically up the climbing frame. Harvey climbs up through the opening himself (right knee lead). Harvey places the bike at the top of the slide and lets it roll down. He wheels the bike around to the climbing frame again and repeats his action of manoeuvring the bike up onto the frame,

Appendix 5 (continued)

Harvey talks to himself as he struggles with the bike, “urgh big bike!”

He wheels the bike onto the climbing frame and another child kicks it.

“No, no, no” says Harvey, “No, don’t kick that!”

He climbs up onto the climbing frame (right knee lead once more). He repeats letting the bike roll down the slide tracking it with his eyes as it does so.

Harvey finds the pink balance bike. He passes where I am watching him from and says,

“Go down there again.”

Harvey repeats what he did with the red bike but this time as he talks to himself he says,

“Naughty, naughty, naughty.”

This time once at the top Harvey wheels the bike to the top of the slide and sits on it.

“Look, I on there,” shouts Harvey.

He tries to ride the bike over the bump at the top of the slide but gives up after he realises that he cannot quite manage to ride over it. Harvey reverts to rolling the bike down the slide and sliding down after it (this time head first on his back).

Harvey finds a large red metal scooter and tries to wheel that up onto the climbing frame but gives up when he realises it is too heavy. He returns his attention to the balance bike. He gets to the top again and positions the bike at the entrance to the slide again. He tries to ride the bike over the bump and realises it will not work again.

“Can’t get on it Glen!” calls Harvey.

I join Harvey and ask why it might not be a good idea to ride the bike down the slide. Harvey explains that he might ‘bump his head.’ Harvey reverts to rolling the bike down the slide and sliding after it.